INSTRUCTION MANUAL

SP-901P

YAESU MUSEN CO., LTD.

TOKYO JAPAN

PHONE PATCH/SPEAKER
SP-901P



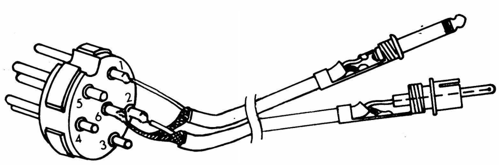
GENERAL

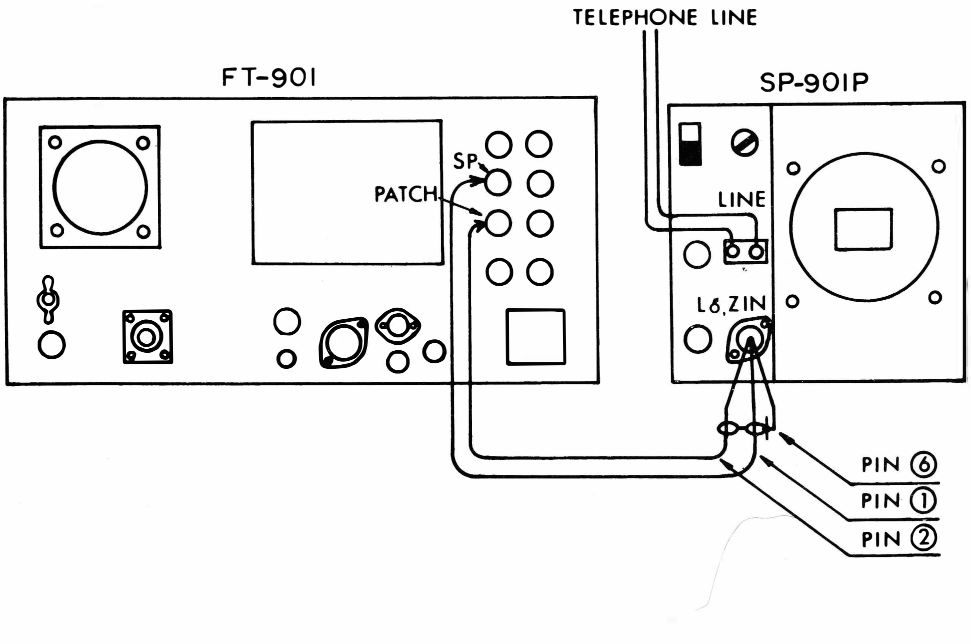
The YAESU Landliner Phone Patch/Speaker, model SP-901P, is designed to be used with the FT-901 series of all mode HF transceivers, providing hybrid phone patch operation as well as an external speaker unit.

All the operating controls are conveniently located on the front panel of the compact housing, which matches the FT-901 series in styling. Jacks are provided on the rear panel for making the necessary external connections.

INSTALLATION

Installation of this unit consists of connecting the telephone line to the jack marked LINE, and making the other interconnections shown in the drawings.





OPERATION

A. Front Panel Controls



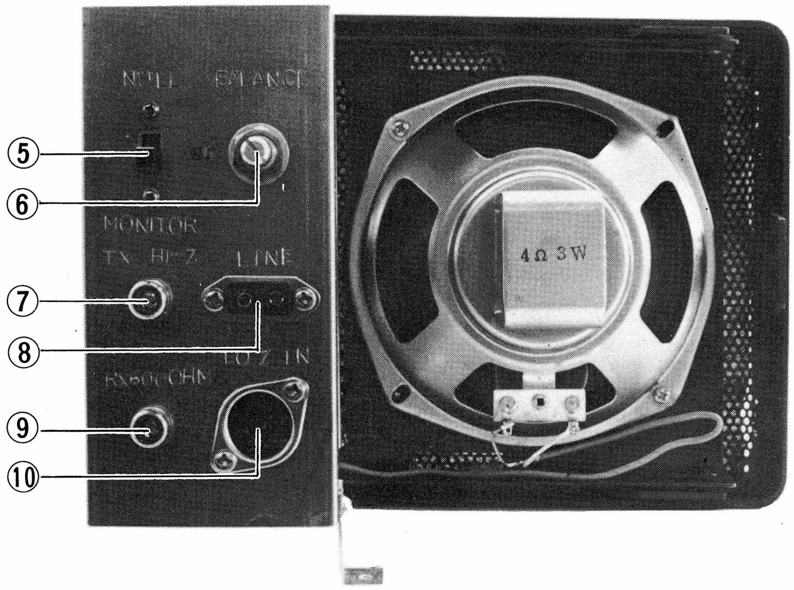
Front Panel

(1) PATCH Switch
In the "ON" position, the hybrid circuit is connected to the phone lines and transceiver is ready for phone patch operation. The built-in speaker is disconnected. When this switch is placed in the "OFF" position, the phone patch is disconnected from the phone lines, and the built-in speaker is connected to the transceiver.

(2) RX GAIN Control
This potentiometer controls the amplitude of the received signal fed to the phone lines.

(3) TX GAIN Control
This potentiometer controls the amplitude of the phone signal fed to the microphone input of the transceiver.

(4) METER
The meter indicates the signal level fed to the phone lines from the transceiver while on receive. The meter also is used to measure the balance for the hybrid circuit, in conjunction with the MONITOR/NULL switch and the BALANCE control on the rear panel.



Chassis Rear Apron

(5) **MONITOR/NULL switch**
This switch is placed in the NULL position while adjusting the balance of the hybrid circuit.
It must be in the MONITOR position for phone patch operation. In this position, the meter will indicate the signal level fed to the phone lines from the transceiver.

(6) **BALANCE control**
This control is used to null the receiver audio output, thus providing isolation between the receiver audio and the microphone input.

(7) **TRANSMITTER HI-Z**
This jack is used to connect the patch output to the microphone input when using a transceiver of high microphone input impedance.

(8) **LINE jack**
This jack is used for connection to the telephone lines.

(9) **RECEIVER 600 Ohm jack**
This jack is used with receivers of 600 ohm audio output impedance.

(10) **LOW-Z IN jack**
Through the LOW-Z IN jack, connections for the speaker output and the microphone input of the FT-901 transceiver are accomplished.

B. Manual Phone Patch Operation

Place the PATCH switch in the PATCH position.

Using the local telephone, contact the landline user of the phone patch, and have him or her stand by.

While receiving a signal, set the transceiver volume control to the 12 o'clock position, and adjust the RX GAIN control for a comfortable level as heard through the telephone.

Place the MONITOR/NULL switch in the NULL position, and adjust the BALANCE control for a minimum signal level as indicated on the meter. The RX GAIN control should be set to approximately 3/4 clockwise rotation for this adjustment.

Return the switch to the MONITOR position.

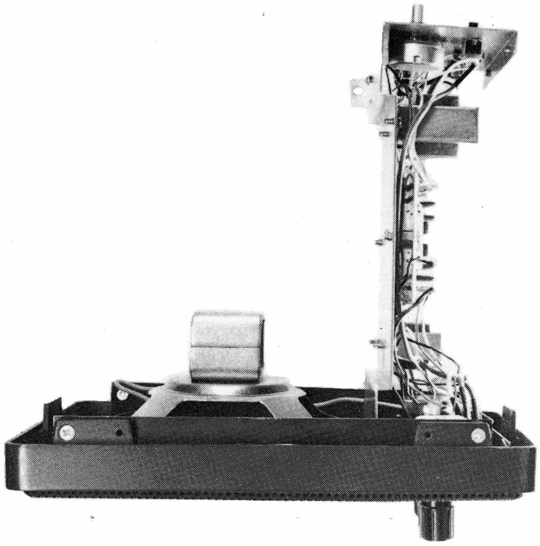
Have the user at the remote telephone speak in a normal voice. Adjust the TX GAIN control so that the telephone line signal will modulate the transceiver correctly when its MIC GAIN control is set to the 12 o'clock position.

During manual phone patch operation, it is necessary for the station operator to monitor the conversation, and switch the transceiver manually from transmit to receive via the PTT or MOX mode. Monitoring of the conversation can be made through the telephone in the operating room.

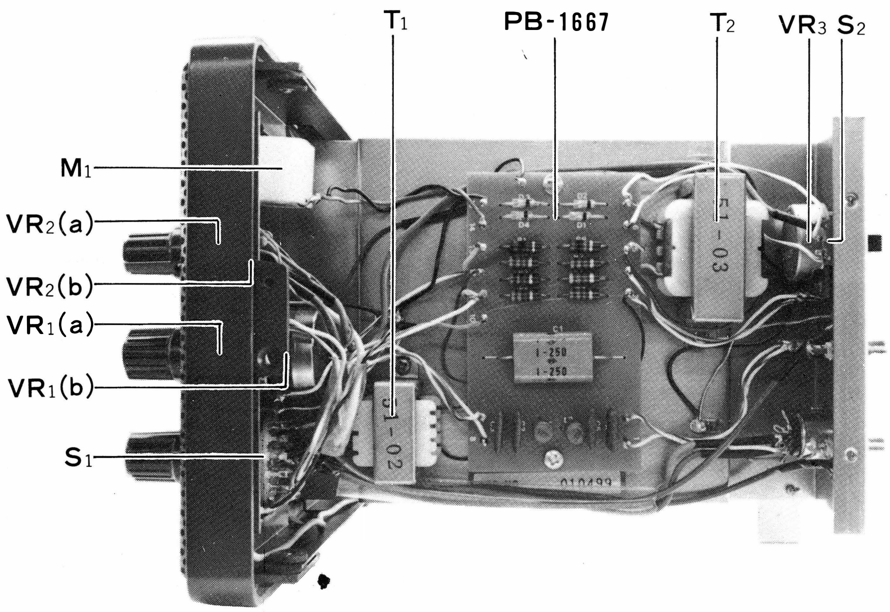
C. Voice Controlled Operation (VOX)

If the telephone line signal is good, VOX operation can be performed. Proper operation of the VOX will depend on obtaining a good null of the receiver signal as descrived on the previous page. The depth of this null depends, in turn, on the quality of the telephone lines, and is best when the line impedance is 600 ohms.

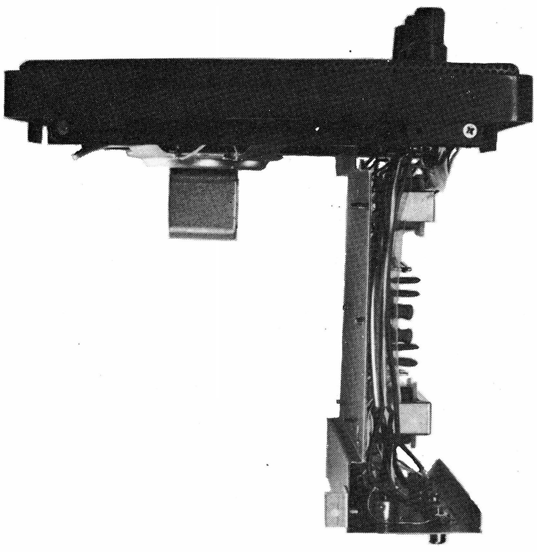
If a good null is obtained, the telephone user should speak in a normal voice. Advance the FT-901 VOX GAIN control until the user's voice activates the transceiver VOX relay. The transceiver should revert to the receive condition when the user stops speaking, and the FT-901 relay hold time control VR602 should be adjusted for smooth operation.



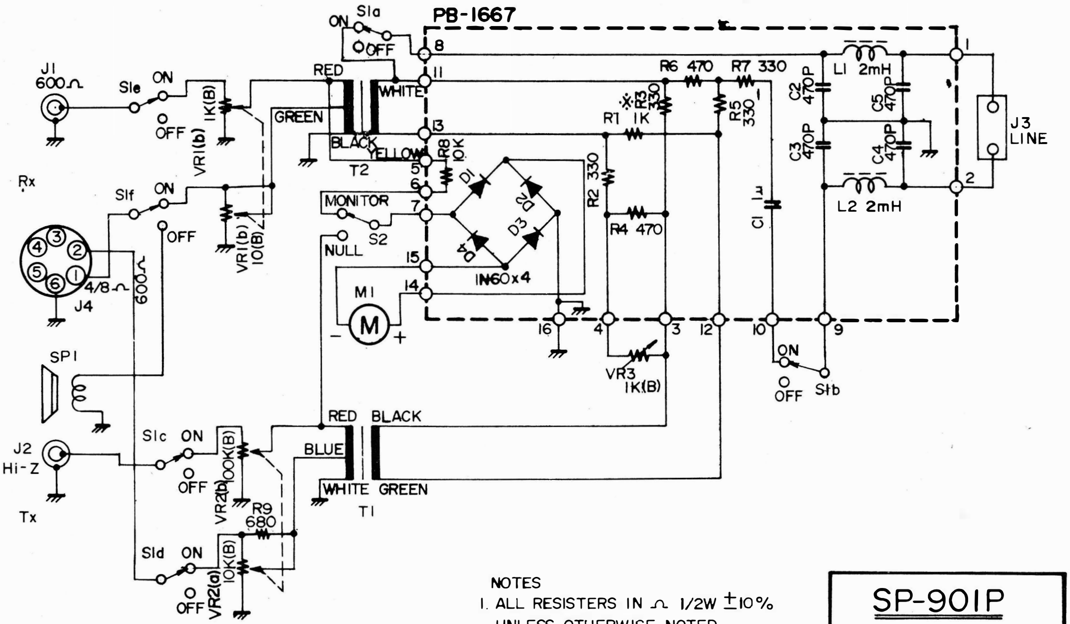
Top View



Right Side View



Bottom View



NOTES
1. ALL RESISTERS IN Ω 1/2W ±10% UNLESS OTHERWISE NOTED.
2. ALL CAPACITORS IN F.
3. ※ VALUE IS NOMINAL.

SP-901P
CIRCUIT DIAGRAM

PARTS LIST

Symbol Number	Parts Number	Descriptipn			
					TRANSFORMER
			T1	21510021	SA2-10936 #510002
	016670AZ	P.C. Board with Components	T2	21510022	SA2-10937 #510003
PB-1667	60316670	P.C. Board			
					METER
		DIODE	M1	74000290	KTC-012 (VU)
D1~4	21090115	Ge 1N60			
					SPEAKER
		RESISTOR	SP1	76000010	SM-120 4Ω 3W
R2, 3, 5, 7	42124331	Carbon Composition 1/2W GK 330Ω			
R4, 6	42124471	Carbon Composition 1/2W GK 470Ω			**SWITCH**
R1	42124102	Carbon Composition 1/2W GK 1kΩ	S1	62000004	MSB-6-2
R8	42124103	Carbon Composition 1/2W GK 10kΩ	S2	63000010	SSF-22-08B
R9	41143681	Carbon Film 1/4W TJ 680Ω			
					RECEPTACLE
		POTENTIOMETER	J1, 2	68020001	CN-7017J
VR1	49800080	RA25YQ20SB 10ΩB/1kΩB	J3	68020010	SI-7501
VR2	49800107	CTM70A 10kΩB/100kΩB	J4	68060010	D6-701-02
VR3	49800106	EVC-BOAS-15B13 1kΩB			
					ACCESSORIES
		CAPACITOR			Plug
C2~5	33824471	Dipped Mica 50WV 470pF	P1, 2	67020001	CN-7017
C1	38335105	Metalized Polyester Film	P3	67020009	SI-7502
		250WV 1μF	P4	67060006	E6-701-02
		INDUCTOR			
L1, 2	53020002	FL7H222J 2.2mH			

YAESU

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